(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 22 September 2005 (22.09.2005)

PCT

(10) International Publication Number WO 2005/088086 A1

(51) International Patent Classification⁷: 9/00, 3/08, 3/035

F01N 3/025,

(21) International Application Number:

PCT/JP2005/004729

(22) International Filing Date: 10 March 2005 (10.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(**30**) **Priority Data:** 2004-068992

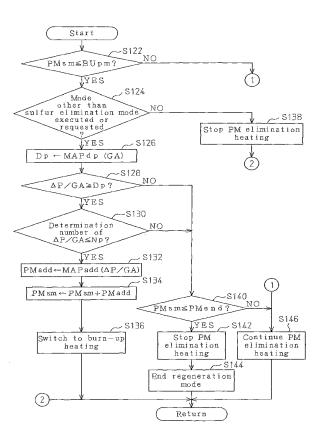
11 March 2004 (11.03.2004) JI

(71) Applicants (for all designated States except US): TOY-OTA JIDOSHA KABUSHIKI KAISHA [JP/JP]; 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). DENSO COR-PORATION [JP/JP]; 1-1, Showa-cho, Kariya-shi, Aichi, 4488661 (JP).

- (72) Inventors; and
- (75) Inventors/Applicants (for US only): MATSUNO, Shigehiro [JP/JP]; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). OTSUBO, Yasuhiko [JP/JP]; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). YOKOI, Tatsuhisa [JP/JP]; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). MATSUOKA, Hiroki [JP/JP]; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). INABA, Takayoshi [JP/JP]; c/o DENSO CORPORATION, 1-1, Showa-cho, Kariya-shi, Aichi, 4488661 (JP).
- (74) Agents: ONDA, Hironori et al.; 12-1, Ohmiya-cho 2-chome, Gifu-shi, Gifu, 5008731 (JP).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

[Continued on next page]

(54) Title: REGENERATION CONTROLLER FOR EXHAUST PURIFICATION APPARATUS OF INTERNAL COMBUSTION ENGINE



(57) Abstract: A regeneration controller for an exhaust purification apparatus (36, 38) of an engine (2) that appropriately burns particulate matter accumulated in the exhaust purification apparatus. The regeneration controller includes an ECU (70) that determines whether an estimated accumulation amount (PMsm) of particulate matter deviates from an actual accumulation amount. When the estimated accumulation amount is less than or equal to a maximum value (BUpm) and an exhaust pressure difference (Δ P/GA) is greater than a correction reference value (Dp), the ECU adds a correction value corresponding to the exhaust pressure difference to the estimated accumulation amount. This causes the estimated accumulation amount to approach the actual accumulation amount.

WO 2005/088086 A1

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.